INFORMATION SYSTEMS

8 September 2010

Advanced Planning Briefing to Industry

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Outline

- **S&T and Program Overview**

- **Warfighter Needs and Information and Analysis S&T**

- **Technical Challenges**

- **Acquisition Strategy / Funding / Schedule**

- **Upcoming Business Opportunities**

- **Contacts**

S&T Overview

Information and Analysis (CBI)

- **Problem:**
  - Limited Capabilities to Accurately Predict, Refine, and Assess Hazards; Inability to Readily Obtain Good Data; Limited Automated Planning & Analysis Tools and Decision Aids; and Few Accredited Models and Simulations

- **Solution:**
  - Make Data Discoverable, Accessible, & Usable
  - Develop Methods that Turn Data into Actionable Information
  - Develop and Use Tools:
    - Super-User Implementations for S&T, R&D, General Support, & Direct Support
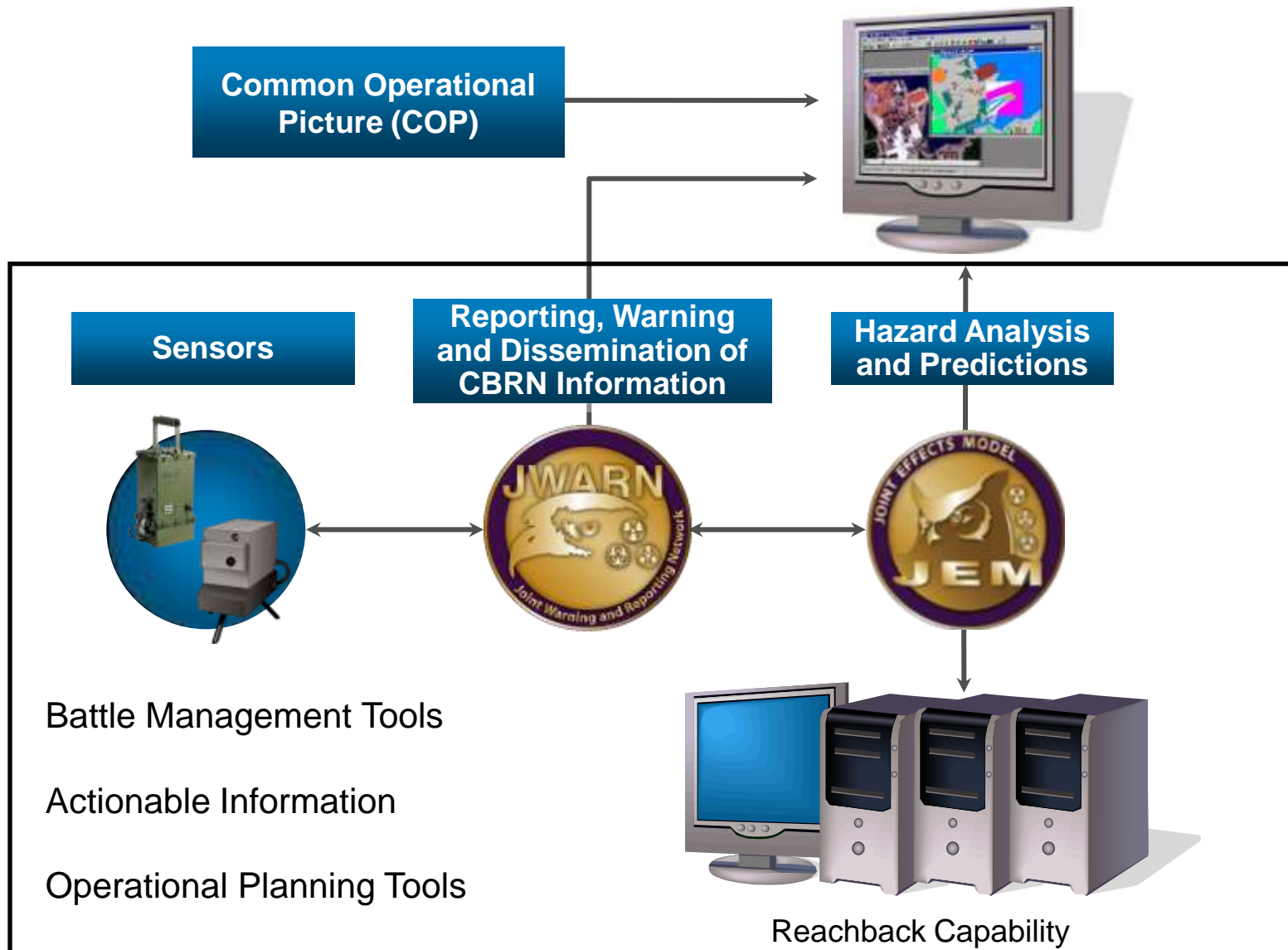   - General-User Implementations for Operational Use

- **Objective:**
  - Develop the Science Behind the Acquisition Programs, Namely JWARN and JEM, as well as the JPM Guardian Installation Protection Program (IPP)
  - Provide Information and Analysis Capabilities that Enable Operational & Programmatic Decision-making

Information Systems S&T Needs Objectives – Near Term (FY09-11)

Supporting PROGRAMS OF RECORD

JEM

Hazard Prediction Information & Analysis Needs:
- JEM S&T Prototype
- GEDIS
- Secondary Evaporation
- Urban Dispersion
- Initial Missile Intercept
- Improved Atmospheric Boundary Layer Modeling
- Enhanced Dispersion Codes / New Environments
- Updated Landuse and Climatology
- Dynamic Population Migration
- Rapid Source Term Estimation

JWARN

Warning & Reporting Information & Analysis Needs
- Tactical Sensor Placement Tool
- Web Enablement
- Route Planning Tool
- JCID on a Chip (JoaC)

Supporting Pre Program of Record and Common/Cross-Cutting Needs:
- **DTRA Integrated WMD Tool Set (IWMDT) Program**
- **DTRA Reachback Program**
- **Operations & Planning Information & Analysis Needs (e.g., CBOSS; JOEF-What's Feasible?)**
- **Medical & Surveillance Information & Analysis Needs (e.g., Casualties; Biosurveillance Concepts)**
- **System Performance Information & Analysis Needs (e.g., requirements, AoAs, T&E)**
- **Chemical Biological Warfare Agent Effects Manual Number 1 (CB-1)**
- **Analysis Support Program**

Information Systems S&T Needs Objectives – Mid Term (FY12-14)

Supporting PROGRAMS OF RECORD

JEM

Hazard Prediction Information & Analysis Needs
- Validated Source Determination and Hazard Refinement Tool
- Initial High Altitude Modeling
- Waterborne Transport Model
- Expanded Agents for Contagious Disease Modeling
- Analysis Capabilities
- Interior Modeling

JWARN

- False Alarm Reduction
- Advanced Information Assimilation & Fusion

Supporting Pre Program of Record and Common/Cross-Cutting Needs:
- **DTRA Integrated WMD Tool Set (IWMDT) Program**
- **DTRA Reachback Program**
- **Operations & Planning Information & Analysis Needs (CBOSS Reconstituted = Gen-1)**
- **Medical & Surveillance Information & Analysis Needs (e.g., Epidemiology Gen-1)**
- **System Performance Information & Analysis Needs (e.g., Gen-1 T&E Simulations)**
- **Chemical Biological Warfare Agent Effects Manual Number 1 (CB-1 Gen-1)**
- **Analysis Support Program**

Information Systems S&T Needs Objectives – Far Term (FY15   )

PROGRAMS

OF

RECORD

> **JEM & JWARN - Spiral Development of S&T as Advancements in Data, Modeling, Simulation, and Technology Become Available**

Supporting Pre Program of Record and Common/Cross-Cutting Needs:
- **DTRA Integrated WMD Tool Set (IWMDT) Program**
- **DTRA Reachback Program**
- **Operations & Planning Information & Analysis Needs (CBOSS Gen-2)**
- **Medical & Surveillance Information & Analysis Needs (e.g., Epidemiology Gen-2)**
- **System Performance Information & Analysis Needs (e.g., Gen-2 T&E Simulations)**
- **Chemical Biological Warfare Agent Effects Manual Number 1 (CB-1 Gen-2)**
- **Analysis Support Program**

Warfighter Needs

JWARN

- **Collect, Generate, Edit, and Disseminate NBC Reports and Plots and Provide a Means of Ensuring all Addressees have Received a Sent Message**

- **Application Support for GCCS-J/A/M, C2PC/JTCW, MCS/FBCB2 (Via Message Exchange)**

- **Allow NBC Reports (NBC-1/NBC-4) to be Formatted and Transmitted within 2 Minutes, and Allow Operator Selection of Automatic, Delayed, or On-command Sending of NBC Reports**

- **Provide C2 Interface with Both Legacy and Developmental Sensors**

Warfighter Needs

JEM

- **A Single, Accredited Source for CBRN Hazard Modeling**
- **Model Urban Effects**
- **Model in Coastal & Littoral Environments**
- **Source Term Estimation**
- **Model High Altitude Missile Intercept Effects**
- **Support for USSTRATCOM Requirements**
- **Improve Transport and Diffusion Methodologies**
- **Model Waterborne Hazards**
- **Model Contagious Diseases**
- **Model Complex Structures and Building Interiors**
- **Model Human Performance Degradation**
- **Interior Modeling**

Software Support Activity (SSA)

- **Overarching**
  - Enforces Net-Centric Policy thru Assessments
  - Establish and Support CBRN COI
- **Architecture**
  - Operational Integrated DoDAF Products for POR
  - Common CBRN Sensor Interface (CCSI) Standards
- **Data**
  - Implementation of Sub-schemas and Attributes
  - Compliancy Checks, Release-ability thru CM Process
  - Harmonizing thru COI to UCORE, C2CORE, and NIEM
- **Security-IA**
  - DIACAP, C&A, CDS and ATO support
- **Standards and Policy**
  - Establish ISP Process/Policy thru Checklist for JCIDS Compliance

Information and Analysis S&T Challenges

Challenge	Focus
CBRN Hazards on Complex Environments and Scenarios	JEM
Rapid Assimilation and Processing of CBRN-related Data to Support Advanced Tactical and T&E Applications	JWARN, T&E, Other Types of Analysis
Developing Engineering Level Models of CBRN Defense Equipment and Major DoD Systems in CBRN Hazard Environments	T&E and other Types of Analysis
Building a CBRN Relevant Data Architecture to Support M&S, Analysis, and IT Development that Facilitates Decision Superiority Integrating CBRN-related IT with other Emerging Technology Initiatives	ALL
Operational Effects Methodologies	JOEF Requirements

Program Technical Challenges

JWARN

- **Integration of Multiple Chemical and Biological Sensor Interfaces (Legacy and Developmental)**

- **Compatibility with Multiple Service-specific Implementations of C2 Systems**

- **Evolving C2 System Architecture(s)**

- **Web Enablement**

- **Wireless Connectivity Incorporating Information Assurance (IA) Requirements**

- **Integration with Major Defense Acquisition Programs (MDAPs)**

- **Bi-Directional Cross Domain Solution (CDS)**

Program Technical Challenges

Software Support Activity (SSA)

- **Net-Centric Policy Implementation**

  – **Transition to Programs Composed of Modular Web Services**

  – **Implementation of CBRN Data Model**

  – **Continued Implementation of CCSI**

- **Support Interface/Interoperability Standards**

  – **Harmonize CBRN Data Model with Other Communities**

  – **Harmonize CCSI with other Communities**

  – **Propose Other Standards for CBRN Based on Community Needs**

- **Management Of Enterprise Common Components**

  – **Approve and Manage Proposed Common Components**

  – **Support Reuse of Common Components as "Building Blocks" for Future Capability**

- **Information Assurance In SOA Environments**

Information and Analysis
S&T Capability Development Strategy

- **Balance Between Requirements Pull:**
  - **Align with the Joint Requirements Office (JRO) to Address Capability Needs**
  - **Align with Joint Program Executive Office (JPEO) Programs to address Technology Gaps**
  - **Answer Critical Science Questions that Support Policy, Doctrine and Requirements Decisions**

- **… and Technology Push:**
  - **Centralize Investment in Applied Research (6.2 & 6.3)**
  - **Identify and Exploit Technology Opportunities**
  - **Identify and Respond to New and Emerging Threats**
  - **Transition New and Innovative Technologies with JPEO**
  - **Maintain a Robust Technology Base: Knowledge, Research Capabilities, and T&E Methodologies**

Information Systems S&T Funding

$(K)	FY11	FY12	FY13	FY14	FY15	TOTAL
6.2	17,771	20,356	22,795	18,720	19,031	98,673
6.3	3,442	3,417	3,009	7,769	7,898	25,535
TOTAL	21,213	23,773	25,804	26,489	26,929	124,208

Upcoming Business Opportunities - S&T

Solicitation/Opportunity	Time Period
DTRA Chemical & Biological Technologies Directorate FY12-13 2-yr Broad Agency Announcement (BAA) **Extramural (non-US Government) Only, Leading to Contract and Grant Awards** **Additional Topics May be Added in the Future; Continue to Monitor**	**FY12-13 Solicitation – *Open Now!***
Small Business Innovation Research (SBIR) program **Opportunity for Small Business Engagement in S&T Program** **Lead to Contract and Grant Awards** • **http://www.dodsbir.net/solicitation/default.htm**	**November 2010**
Directed Research in DTRA CB Directorate	**As Needed**
DTRA R&D Innovation Office – Science and Technology New Initiatives BAA (HDTRA1-07-RDINO-BAA)	**OPEN**
DTRA Fundamental Research to Counter Weapons of Mass Destruction BAA (HDTRA1-09-14-FRCWMD-BAA)	**Autumn 2010**

Relevant Websites:
http://www.dtra.mil
http://www.fbo.gov
http://www.grants.gov

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Program Acquisition Strategy

JWARN

- **Future Increment of Development Followed by Pre-Planned Product Improvement (P3I)**

- **Future Increment (FY11 – FY16)**
  - **Web Enable JWARN - Re-engineer into Web Services (SOA) to Accommodate Evolving Service C2 Strategies and Decrease Dependence on their Architecture**
  - **Integrate JWARN into Evolving Service C2 Systems (TBMCS-UL, LightNING C2)**
  - **Interoperability with Medical Surveillance Systems**
  - **Emerging and Original Increment 2 Requirements Based on ORD (Will be Designated in CDD)**
  - **AoA will Assess Evolving Service Needs and Determine Final Capability Requirements**

JPM IS Program Funding

$(K)	FY11	FY12	FY13	FY14	FY15	TOTAL
RDT&E	26,886	30,057	30,955	31,576	32,093	151,410
PROC	10,385	8,078	8,072	14,032	15,707	56,274
TOTAL	37,271	38,135	39,027	45,608	47,800	207,684

Upcoming Business Opportunities – JPM IS

Solicitation/Opportunity	**Time Period**
JPM IS SSA • **Seaport Support IDIQ Multiple Award Contract**	**FY11 and Beyond**
JWARN Future Increment • **Full and Open Contract Award for JWARN follow on Increment**	**FY12 and Beyond**

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